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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/406,798
Filing Date: September 28, 1999
Appellant(s): TUNODA, HIROSI

George N. Stevens
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed August 13, 2007 appealing from the Office action mailed January 26, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,253,023	Fukushima et al.	6-2001
5,867,214	Anderson et al.	2-1999

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 7, 9, 10, 13, 15, 16, 19, 21, 22, 24, 25 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Fukushima et al.

For **Claims 1 and 19**, Fukushima et al. disclose, as shown in figures 1 and 2 and as stated in columns 6 (lines 17 – 25 and 32 – 39), 7 (lines 17 – 19 and 40 – 67), 8 (lines 6 – 13, 18 – 20, 27 – 31, and 37 – 46), and 10 (lines 3 – 53), a method for recording image, comprising the steps of:

storing (S8; see figure 2) image data continuously (while both SW1 and SW2 are depressed; see figure 2) obtained by an image pickup operation in a storage medium (memory part 6; see column 10, lines 23 – 29 and 38 – 48);

measuring (S11; see figure 2) the amount of the image data (RECCNT; see column 7, lines 17 – 19) stored in the storage medium (6) until reaching a predetermined amount of data (CTH; see column 8, lines 9 – 13; S11 is after the image pickup operation of S7);

and recording (S15; see figure 2) each piece of the image data being stored in the storage medium (6) into a non-volatile recording medium (8), after the measured amount (RECNT) of the image data equals the predetermined amount (CTH),

wherein after starting the step of recording, the step of storing each piece of image data continuously obtained by the image pickup operation in the storage medium (6) and step of recording each piece of the image data being stored in the storage medium into the non-volatile recording medium (8) are performed continuously, in parallel and irrespective of the amount of the image data stored in the storage medium during the image pickup operation without pausing, interrupting or reducing the rate of recording the image data (see detailed explanation below).

Fukushima et al. disclose an image pickup device that is capable of "stably executing continuous recording of an image signal by means of a simple arrangement with a small power consumption" (see column 3, lines 39 – 43). Fukushima et al. achieve this by providing "first storage means for temporarily storing image inputted thereinto and outputting the image data, second storage means having moving element for storing in a recording medium the image data outputted from the first storage means, ... after a predetermined amount of image data is stored in the first storage means" (see column 3, lines 43 – 54). As shown in figure 2, once the amount of image data (RECCNT) stored in the storage medium (6) is greater than a predetermined amount (CTH; see Step S10), the image data is transferred from the storage medium (6) to the hard disk drive (8) to enable continuous image recording (see Step S15). So long as SW2 is depressed (i.e., during the image pickup operation), image data is continuously captured and stored in the storage medium (6; see Step 5). In other words, the Examiner submits that after the predetermined amount of image data is stored in the storage medium, the continuous image pickup, storage, and recording operation is uninterrupted and unaffected by the total amount of image data that is captured or stored (see column 10, lines 23 – 47).

For **Claims 7 and 22**, Fukushima et al. disclose, as shown in figures 1 and 2 and as stated in columns 6 (lines 17 – 25 and 32 – 39), 7 (lines 17 – 19 and 40 – 67), 8 (lines 6 – 13, 18 – 20, 27 – 31, and 37 – 46), and 10 (lines 3 – 53), an image pickup apparatus (see figure 1) comprising:

an optical lens (1);

an image pickup device (3) for taking image through the optical lens (1);

storage instructions device (10) for storing (S8; see figure 2) image data continuously (while both SW1 and SW2 are depressed; see figure 2) obtained by an image pickup operation (S7; see figure 2) of the image pickup device (3) in a storage medium (6);

record instructing device (10) for allowing a record (S15; see figure 2) the image data from the storage medium (6) to a non-volatile recording medium (8);

measuring device (14) for measuring of the amount of image data (RECCNT; see column 7, lines 17 – 19) stored in the storage medium (6) until reaching a predetermined amount of data (CTH; see column 8, lines 9 – 13; S11 is after the image pickup operation of S7); and

parallel processing instruction device (14), for instructing the record instructing device (14) to record into a non-volatile recording medium (8) each piece of the image data being stored in the storage medium (6) during the storing operation (Step S8) after the measured amount (RECNT) of the image data equals the predetermined amount (CTH),

wherein after starting the step of recording, the step of storing each piece of image data continuously obtained by the image pickup operation in the storage medium (6) and step of recording each piece of the image data being stored in the storage medium into the non-volatile recording medium (8) are performed continuously, in parallel and irrespective of the amount of

the image data stored in the storage medium during the image pickup operation without pausing, interrupting or reducing the rate of recording the image data (see detailed explanation below).

Fukushima et al. disclose an image pickup device that is capable of "stably executing continuous recording of an image signal by means of a simple arrangement with a small power consumption" (see column 3, lines 39 – 43). Fukushima et al. achieve this by providing "first storage means for temporarily storing image inputted thereinto and outputting the image data, second storage means having moving element for storing in a recording medium the image data outputted from the first storage means, ... after a predetermined amount of image data is stored in the first storage means" (see column 3, lines 43 – 54). As shown in figure 2, once the amount of image data (RECCNT) stored in the storage medium (6) is greater than a predetermined amount (CTH; see Step S10), the image data is transferred from the storage medium (6) to the hard disk drive (8) to enable continuous image recording (see Step S15). So long as SW2 is depressed (i.e., during the image pickup operation), image data is continuously captured and stored in the storage medium (6; see Step 5). In other words, the Examiner submits that after the predetermined amount of image data is stored in the storage medium, the continuous image pickup, storage, and recording operation is uninterrupted and unaffected by the total amount of image data that is captured or stored (see column 10, lines 23 – 47).

For **Claims 13 and 25**, Fukushima et al. disclose, as shown in figures 1 and 2 and as stated in columns 6 (lines 17 – 25 and 32 – 39), 7 (lines 17 – 19 and 40 – 67), 8 (lines 6 – 13, 18 – 20, 27 – 31, and 37 – 46), and 10 (lines 3 – 53), an image pickup apparatus (see figure 1) where image data continuously (see column 10, lines 23 – 29 and 38 – 48) obtained by an image pickup operation (S7; see figure 2) are stored (S8; see figure 2) in a storage medium (6) and the image

data being stored in the storage medium (6) are recorded (S15l see figure 2) into a non-volatile recording medium (8), the image pickup apparatus (see figure 1) comprising:

an optical lens (1);

an image pickup device (3) for taking image through the optical lens (1);

a controller (14) which is capable of performing the following operations;

i) storing (S8) the image data (while both SW1 and SW2 are depressed; see figure 2) the storage medium (by means of memory controller 10);

ii) measuring (S11) the amount of the image data (RECCNT; see column 7, lines 17 – 19) stored in the storage medium (6) until reaching a predetermined amount of data (CTH; S11 is after the image pickup operation of S7);

iii) recording (S15) each piece of the image data being continuously stored in the storage medium (6) into the recording medium (8) after the measured amount (RECCNT) of the image data equals the predetermined amount (CTH),

wherein after starting the step of recording, the step of storing each piece of image data continuously obtained by the image pickup operation in the storage medium (6) and step of recording each piece of the image data being stored in the storage medium into the non-volatile recording medium (8) are performed continuously, in parallel and irrespective of the amount of the image data stored in the storage medium during the image pickup operation without pausing, interrupting or reducing the rate of recording the image data (see detailed explanation below).

Fukushima et al. disclose an image pickup device that is capable of "stably executing continuous recording of an image signal by means of a simple arrangement with a small power consumption" (see column 3, lines 39 – 43). Fukushima et al.

achieve this by providing "first storage means for temporarily storing image inputted thereinto and outputting the image data, second storage means having moving element for storing in a recording medium the image data outputted from the first storage means, ... after a predetermined amount of image data is stored in the first storage means" (see column 3, lines 43 – 54). As shown in figure 2, once the amount of image data (RECCNT) stored in the storage medium (6) is greater than a predetermined amount (CTH; see Step S10), the image data is transferred from the storage medium (6) to the hard disk drive (8) to enable continuous image recording (see Step S15). So long as SW2 is depressed (i.e., during the image pickup operation), image data is continuously captured and stored in the storage medium (6; see Step 5). In other words, the Examiner submits that after the predetermined amount of image data is stored in the storage medium, the continuous image pickup, storage, and recording operation is uninterrupted and unaffected by the total amount of image data that is captured or stored (see column 10, lines 23 – 47).

As for **Claims 3, 9, 15, 21, 24, and 27**, in the rejection of the parent claims, the Examiner mainly relied upon the generic and very basic operation of Fukushima et al., as shown in figures 1 and 2 and their associated descriptions. However, the image pickup apparatus of Fukushima et al. incorporates several features not clearly shown in figures 1 and 2. The Examiner directs the Applicant to figure 3 and columns 10 (lines 58 – 67) and 11 (lines 1 – 26).

Fukushima et al. disclose converting an image signal obtained by the image pickup operation (S7) to digital image data in units of image frames (S/H – 4 and A/D – 5/1018); and

compressing (compression circuit – 1020) the image data the image data before storing in the storage medium (6/1024).

As for **Claims 4, 10, and 16**, since Fukushima et al. disclose a continuous shot mode, it is inherent to Fukushima et al. that image data are compressed according to a motion picture compression form.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima et al. in view of Anderson et al.

As for **Claims 2, 8, 14, 20, 23, and 26**, Fukushima et al. discloses a storage medium (6) for storing image data continuously obtained by an image pickup operation (S7) and a non-volatile recording medium (8) for recording the image data being stored in the storage medium (6). However, Fukushima et al. do not disclose storing in the storage medium (6) storage information including a start address and data length of the image data being stored in the storage medium (6) and recording the image data being stored in the storage medium (6) to the recording medium based on the storage information (8).

Anderson et al. also disclose, as shown in figures 2 – 4 and as stated in columns 3 (lines 54 – 64), 4 (lines 1 – 12, 21 – 25, and 41 – 67), and 5 (lines 1 – 48), a storage medium (RAM 60)

and a non-volatile recording medium (Flash Memory 64) for storing image data. Anderson et al. disclose storing in the storage medium (60) storage information (in Data Cells 76) including a start address and data length (through the use of "pointers") of the image data being stored in the storage medium and recording the image data being stored in the storage medium to the recording medium based on the storage information (processing requests and "Compressed Image Data in Flash Memory" flags). As stated in column 2 (lines 18 – 29), at the time the invention was made, one with ordinary skill in the art would have been motivated to have stored storage information in the storage medium, including a start address and data length of the image data being stored in the storage medium, and recording the image data being stored in the storage medium to the recording medium based on the storage information as taught by Anderson et al. in the storage medium of Fukushima et al. as a means to maintain the storage medium in a condition to receive new image data from the imaging device. Therefore, at the time the invention was made, it would have been obvious to one with ordinary skill in the art to have stored storage information in the storage medium as taught by Anderson et al. in the storage medium of Fukushima et al.

As for **Claims 5, 11, and 17**, in the rejection of the parent claims, the Examiner mainly relied upon the generic and very basic operation of Fukushima et al., as shown in figures 1 and 2 and their associated descriptions. However, the image pickup apparatus of Fukushima et al. incorporates several features not clearly shown in figures 1 and 2. The Examiner directs the Applicant to figure 3 and columns 10 (lines 58 – 67) and 11 (lines 1 – 26).

Fukushima et al. disclose converting an image signal obtained by the image pickup operation (S7) to digital image data in units of image frames (S/H – 4 and A/D – 5/1018); and

compressing (compression circuit – 1020) the image data the image data before storing in the storage medium (6/1024).

As for **Claims 6, 12, and 18**, since Fukushima et al. discloses a continuous shot mode, it is inherent to Fukushima et al. that image data are compressed according to a motion picture compression form.

(10) Response to Argument

A. Claims 1, 3, 4, 7, 9, 10, 13, 15, 16, 19, 21, 22, 24, 25, and 27 are not anticipated by Fukushima et al. (U.S. 6,253,023) under 35 U.S.C. §102(e).

Appellant states, "It is the Appellant's position that the hard drive used in Fukushima et al. cannot be kept operating continuously and in parallel while both storing and recording image data due to the power consumption required by the hard drive and therefore must be switched to a power save mode or a stand-by mode" (see Brief, paragraph spanning pages 13 and 14).

Appellant additionally states, "The Examiner apparently agreed with the Appellant regarding the operation of the Fukushima et al. at one time during the prosecution history of the present application ... Further, and simply stated, there is no description or suggestion in Fukushima et al. that image data may be stored and recorded continuously and in parallel as recited in the independent claims" (see Brief, page 14, second full paragraph; and paragraph spanning pages 15 and 16).

Appellant argues, "However, simply because the term 'continuous' is used in the reference, there is no suggestion that image data may be stored in a storage medium and then recorded in a non-volatile recording medium continuously and in parallel as recited in the

independent claims. No such disclosure is provided by Fukushima et al" (see Brief, paragraph spanning pages 15 and 16).

With respect to this issue, the Examiner respectfully disagrees with Appellant's position. Of concern to Appellant is the operation of the hard drive (8 – figure 1) as shown in steps S13 – S16 of figure 2 of Fukushima et al. According to Fukushima et al., while the SW1 and SW2 are continuously depressed by a photographer (S3 and S5), images are captured and stored in the buffer memory (6 – figure 1; S7 – S8). Fukushima et al. assign a counter flag RECCNT (S9) to keep track of the current number of pictures in the buffer memory (6) such that when the current count exceeds a certain minimum (S11) number of images, the hard drive is activated and the images stored in the buffer memory are permanently recorded in the hard drive (S13 – S16). The hard drive (8) is then switched back to a power save mode.

According to Fukushima et al. (see column 8, lines 27 – 45), "If the count value of the RECCNT exceeds the value CTH or STH in Step S11 or S12 of FIG. 2, the system controller 14 transmits an active command to the hard disk unit provided in the hard disk part 8, and the hard disk unit which has received the active command is switched to the above-described active mode, where the hard disk in the hard disk unit is made to start rotating (Step S13 in FIG. 2) ... the image data stored in the buffer memories M0 to M7 of the memory part 6 are transmitted to the hard disk part 8, and the count value of the RECCNT provided in the system controller 14 is decremented by the number of images corresponding to the image data transmitted from the memory part 6 to the hard disk part 8."

Appellant believes that during a continuous picture taking operation (i.e., while SW1 and SW2 are continuously depressed), since the hard drive (8), as described above, is periodically

switched between a power saving mode and an activated mode based upon the current count of the number of images stored in the buffer memory (6), Fukushima et al. cannot teach, after starting the recording of images to the hard drive, to continuously store captured images in the buffer memory and to continuously record images stored in the buffer memory to the hard drive in parallel without pausing, interrupting or reducing the rate of recording the image data.

However, the Examiner respectfully notes that with respect to the entire picture taking operation performed by Fukushima et al. (i.e., from the time both SW1 and SW2 are depressed and held depressed until the time at least one of SW1 and SW2 are no longer depressed), Fukushima et al. continuously capture images and transfer them to the buffer memory at a steady rate (see column 3, lines 39 – 43). Therefore, even though the hard drive is alternatively switched between a power saving mode and an activated mode, the switching is continuous and also at a steady rate. For instance, if the certain number of images in the buffer memory that must be exceeded is 5 images after which the hard drive is activated and permanently records the 5 images, over the duration of the operation images would still be continuously captured and stored continuously in parallel with operation of the hard drive. In effect, the basic operation of the hard drive would be as follows: power saving mode, activation, record images, power saving mode, activation, record images, etc. Thus, images are still being recorded at a steady rate and during operation of the continuous picture taking mode, the basic operation of the hard drive would never be paused or interrupted.

Therefore, for the reasons given above, the Examiner respectfully disagrees with Appellant's assertion that there is no suggestion that image data may be stored in a storage

medium and then recorded in a non-volatile recording medium continuously and in parallel as recited in the independent claims.

However, Appellant further argues, "Figure 2 of Fukushima et al. indicates that "DECREMENT RECCNT" is present in step 16, hence "TRANSMIT IMAGE DATA TO HARD DRIVE" in step 15 is not limited to transmittance of the entire image data stored in the memory unit at once ... [however], since transmittance to a hard drive is always carried out in step 11 based on the comparison result of RECCNT and CTH ... [therefore], Fukushima et al. fails to disclose the storing in a storage medium and the recording in a non-volatile recording medium recording irrespective of the amount of the image data stored in the storage medium as recited in the independent claims" (see Brief, page 16, second full paragraph).

With respect to this issue, the Examiner again respectfully disagrees with Appellant's position. As stated above, the Examiner considers the entire picture taking operation performed by Fukushima et al. to be from the time both SW1 and SW2 are depressed and held depressed until the time at least one of SW1 and SW2 are no longer depressed and that during this operation Fukushima et al. continuously capture images and transfers them to the buffer memory at a steady rate (see column 3, lines 39 – 43). Fukushima et al. never set limits on the total amount of image data captured during the entire picture taking operation. In other words, the duration and amount of images captured during entire picture taking operation is solely determined by the photographer's desires. Therefore, the step of storing and step of recording are indeed carried out irrespective of the total amount of the image data stored. Moreover, the Examiner respectfully notes that the total amount of the image data stored, as described above, fully encompasses "the amount of the image data stored", as claimed.

Thus, for the reasons given above, the Examiner respectfully disagrees with Appellant's assertion that Fukushima et al. fails to disclose the storing in a storage medium and the recording in a non-volatile recording medium recording irrespective of the amount of the image data stored in the storage medium as recited in the independent claims.

B. Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 are not obvious over Fukushima et al. (U.S. 6,253,023) in view of Anderson et al. (U.S. 5,867,214) under 35 U.S.C. §103(a).

Appellant's simply argues, "The combined references fail to teach or suggest all the claim limitations. Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 are all dependent claims that incorporate the features of the claims they directly or indirectly depend from. In this case, the prior art references fail to disclose all the features of the independent claims as discussed above ... [therefore], reversal of the rejection of claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 under 35 USC § 103 as unpatentable over Fukushima et al. (U.S. 6,253,023) in view of Anderson et al. (U.S. 5,867,214) is respectfully requested" (see Brief, page 17, third full paragraph).

The Examiner has respectfully demonstrated the anticipation of Claims 1, 3, 4, 7, 9, 10, 13, 15, 16, 19, 21, 22, 24, 25, and 27 by Fukushima et al. (U.S. 6,253,023) under 35 U.S.C. §102(e). Since Appellant's arguments regarding Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 exclusively rely upon Appellant's arguments regarding Claims 1, 3, 4, 7, 9, 10, 13, 15, 16, 19, 21, 22, 24, 25, and 27, Appellant's arguments regarding Claims 2, 5, 6, 8, 11, 12, 14, 17, 18, 20, 23, and 26 fail for at least the same reasons given above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Justin Misleh

Conferees:

Lin Ye

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SUPERVISORY PATENT EXAMINER

David Ometz

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